

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



10/531572



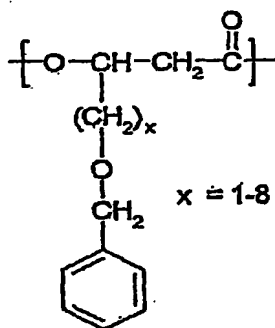
(43) International Publication Date
27 May 2004 (27.05.2004)

PCT

(10) International Publication Number
WO 2004/044031 A1

- (51) International Patent Classification⁷: **C08G 63/06**,
C12P 7/62
- (21) International Application Number:
PCT/JP2003/013530
- (22) International Filing Date: 23 October 2003 (23.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
NO. 2002-309786 24 October 2002 (24.10.2002) JP
NO. 2003-356749 16 October 2003 (16.10.2003) JP
- (71) Applicant (for all designated States except US): **CANON KABUSHIKI KAISHA** [JP/JP]; 3-30-2, Shimomaruko, Ohta-ku, Tokyo 146-8501 (JP).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): **KENMOKU, Takashi** [JP/JP]; c/o CANON KABUSHIKI KAISHA, 3-30-2, Shimomaruko, Ohta-ku, Tokyo 146-8501 (JP). **YANO, Tetsuya** [JP/JP]; c/o CANON KABUSHIKI KAISHA, 3-30-2, Shimomaruko, Ohta-ku, Tokyo 146-8501 (JP). **KOZAKI, Shinya** [JP/JP]; c/o CANON KABUSHIKI KAISHA, 3-30-2, Shimomaruko, Ohta-ku, Tokyo 146-8501 (JP). **HONMA, Tsutomu** [JP/JP]; c/o
- (74) Agents: **OKABE, Masao** et al.; No. 602, Fuji Bldg., 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100-0005 (JP).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NEW POLYHYDROXYALKANOATE COMPRISING UNIT HAVING (PHENYLMETHYL)OXY STRUCTURE ON SIDE CHAIN THEREOF, AND METHOD FOR PRODUCING THE SAME

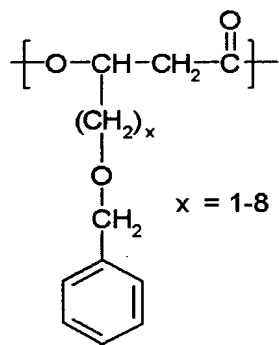


(57) Abstract: Provided are a PHA having an active group, which is produced by microorganisms with high productivity, and in which the ratio of units on its side chain having an active group can be controlled and the physical properties can be arbitrarily controlled so that its application as a polymer is not limited, and a method for producing the same. PH comprising a 3-hydroxy- ω -[(phenylmethyl)oxy]alkanoic acid unit expressed by the following chemical formula (1): wherein x can be one or more integers within the range shown in the chemical formula is provided.

ABSTRACT

Provided are a PHA having an active group,
 which is produced by microorganisms with high
 5 productivity, and in which the ratio of units on its
 side chain having an active group can be controlled
 and the physical properties can be arbitrarily
 controlled so that its application as a polymer is
 not limited, and a method for producing the same.

10 A 3-hydroxy- ω -[(phenylmethyl)oxy]alkanoic acid
 unit expressed by the following chemical formula (1):



(1)

wherein x can be one or more integers within the
 range shown in the chemical formula.

15

20